

Notice of Allowability

Application No.

09/596,492

Examiner

Hoang V Nguyen

Applicant(s)

DAVIS, DANIEL

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 1 September 2004.
2. ☒ The allowed claim(s) is/are 1-44.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

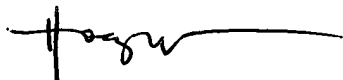
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 8/20/01.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


HOANG V. NGUYEN
PRIMARY EXAMINER

Allowable Subject Matter

1. Claims 1-44 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, Toland discloses a parabolic reflector phased array antenna comprising a reflector support structure, a plurality of parabolic reflector cells mounted side by side in an array in an interior portion of the support structure, each reflector cell includes a parabolic RF signal reflector and an array of RF feed elements, each reflector having a flexible reflecting surface and a plurality of elongated edges defining a geometric shape, and including respective corner portions at the intersection of pairs of edges, respective rigid support members located at the corner portions of the reflector for stiffening the reflector and the elongated edges, and also for providing a support for the array of feed elements, a set of flexible support members extending between the rigid support members of each reflector cell and the respective array of feed elements for positioning the array above the RF signal reflector, and a mechanism located beneath each of the RF signal reflectors for pulling the respective flexible reflecting surface down to a substantially parabolic shape. Toland, however, fails to specifically teach that the geometric shape is a polygonal shape. The points of polygonal geometric shape reflector affect the charge density and current on the reflector plate that produce different radiation field, especially in the near-field, giving a substantially different impedance as compared to the reflector having circular shape, as taught by Toland.

Claims 2-16 are allowed for depending on claim 1.

Regarding claims 17-25, none of the prior art of record fairly teaches or suggests a method of steering a transmitted and/or received beam of a phased array antenna system including a plurality of super element reflector cells each including a parabolic reflector element having a polygonal shape and a plurality of feed elements arranged in a planar array and being mounted on a support structure, the method comprising the steps of activating the feed elements of each feed array in selected groups of feed elements at predetermined locations relative to the focal point of the respective array to achieve a course scan of the beam; and steering the array factor of the beam to achieve a fine scan of the beam.

Regarding claim 35, Toland discloses an antenna pattern comprising a reflector array pattern in product with array-fed reflector patterns, the reflector array pattern generated by a lattice of four or more reflector antennas, and the array-fed reflector patterns generated by selectively actuatable array feeds above the reflector antennas. Toland, however, fails to specifically teach that the array pattern generated by a lattice of four or more reflector antennas having a polygonal geometric peripheral shape.

Claims 36-39 are allowed for depending on claim 35.

The reasons for indicating allowable subject matter for claims 26-34 and 40-44 were provided in the previous Office action.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Correspondence

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn
9/16/04



**HOANG V. NGUYEN
PRIMARY EXAMINER**